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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,817	08/28/2003	Hiroto Kasuga	S-2491/DIV	5983

7590 06/17/2004  
Leonard W. Sherman  
Sherman & Shalloway  
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Alexandria, VA 22314

EXAMINER

PUTTLITZ, KARL J

ART UNIT	PAPER NUMBER
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1621

DATE MAILED: 06/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary****Application No.**

10/649,817

**Applicant(s)**

KASUGA ET AL.

**Examiner**

Karl J. Puttlitz

**Art Unit**

1621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 5 and 11-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5 and 11-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

Claim 5 objected to because of the following informalities: "a" should be inserted before "method" in claim 5, line 3. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5 and 11-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 and 11-13 recite that the catalyst has "reduced" activity. This term is indefinite since one of ordinary skill is without a point of reference to determine how catalyst activity is "reduced".

### ***Prior Art Rejections***

The claims of the application are drawn to, inter alia, a process for producing methacrylic acid through catalytic vapor-phase oxidation of methacrolein or catalytic vapor-phase oxidative dehydrogenation of isobutyric acid, characterized by using a catalyst which has been reactivated by the method comprising treating a catalyst for use in methacrylic acid production by vapor-phase oxidation of methacrolein or vapor-phase oxidative dehydrogenation of isobutyric acid, which catalyst containing P and Mo and exhibiting reduced

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activity, with a gas containing a nitrogen-containing heterocyclic compound, and steam.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 5 and 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent Application Publication No. 2002/0058582 to Kasuga et al. (Kasuga).**

Kasuga teaches a method of reactivating a catalyst for methacrylic acid production is provided, said catalyst being used in the occasions of producing methacrylic acid through vapor-phase oxidation of methacrolein or vapor-phase oxidative dehydrogenation of isobutyric acid, containing P and Mo and exhibiting reduced catalytic activity, which method is characterized by treating the catalyst with a gas which contains a nitrogen-containing heterocyclic compound. See paragraph 0008.

The method is further characterized by treating the catalyst with a gas which contains a nitrogen-containing heterocyclic compound and steam; or with a

gas which contains a nitrogen-containing heterocyclic compound and another gas which contains steam. See paragraph 0009.

The nitrogen-containing heterocyclic compound to be is at least one compound selected from pyridine, piperidine, piperazine, quinoline and derivatives thereof is conveniently used. See paragraph 00014.

The foregoing anticipates the rejected claims within the meaning of section 102.

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

**Claims 5 and 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent No. 4,814,305 to Kamogawa et al. (Kamogawa).**

Kamogawa teaches that a highly active catalyst can be regenerated by treating the deactivated catalyst with aqueous ammonia and an aqueous solution containing at least one of a nitrogen-containing heterocyclic compound, an amine, and ammonium carbonate, in the presence, if necessary, of nitrate ions and/or either aqueous hydrogen peroxide or ozone.

The patent teaches regeneration of a phosphorus-, molybdenum- and alkali metal-containing catalyst for the production of an unsaturated carboxylic acid by vapor-phase oxidation of an unsaturated aldehyde.

Nitrogen-containing heterocyclic compounds or amines which can be used include, for example, pyridine, piperazine, pyrimidine, pyrazine, piperazine, triethylamine, triethanolamine, and hydrochlorides, sulfates and nitrates of them. See column 2, lines 61-65.

Steam is added as an ingredient for the reaction. See examples.

The foregoing anticipates the rejected claims within the meaning of section 102.

**Claims 5 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 60232247 (JP 247).**

This patent teaches regeneration of a molybdophosphoric acid catalyst with a nitrogen containing heterocyclic ring containing compound. The catalyst is used for the vapor phase oxidation of organic compounds.

The foregoing anticipates the rejected claims within the meaning of section 102.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which

said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 5 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kasuga, Kamogawa, and JP 247 (the applied references), in view of U.S. Patent No. 5,716,895 to Sugi et al. (Sugi).**

The applied references do not explicitly teach application of steam. It is for this proposition that the examiner applies Sugi. Specifically, Sugi illustrates that application of steam to regenerate molybdophosphoric acid catalyst is commonplace in the art. See column 1, lines 27-43. One of ordinary skill would have been motivated to modify the applied references to add steam since Sugi teaches that this application increases surface area of the catalyst. See column 1, lines 39-43. Therefore, the combined references render the rejected claims obvious since the combination teach the elements of the claimed invention with a reasonable expectation of success.

### ***Double Patenting***

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

**Claims 5 and 11-13 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims, 1-26 of prior U.S. Patent No. 6,664,206**

**This is a double patenting rejection.**

**Claims 5 and 12 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-8 of prior U.S. Patent No. 6,673,733 This is a double patenting rejection.**

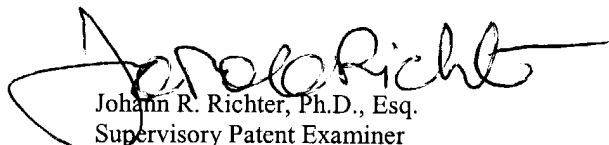
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl J. Puttlitz whose telephone number is (571) 272-0645. The examiner can normally be reached on Monday-Friday (alternate).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on (571) 272-0646.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1235.

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